

§ 29.1522

(Secs. 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425); and sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-1, 30 FR 8778, July 13, 1965; Amdt. 29-3, 33 FR 971, Jan. 26, 1968; Amdt. 29-15, 43 FR 2327, Jan. 16, 1978; Amdt. 29-26, 53 FR 34220, Sept. 2, 1988; Amdt. 29-34, 59 FR 47768, Sept. 16, 1994; Amdt. 29-41, 62 FR 46173, Aug. 29, 1997]

§ 29.1522 Auxiliary power unit limitations.

If an auxiliary power unit that meets the requirements of TSO-C77 is installed in the rotorcraft, the limitations established for that auxiliary power unit under the TSO including the categories of operation must be specified as operating limitations for the rotorcraft.

(Secs. 313(a), 601, 603, 604, Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423), sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Amdt. 29-17, 43 FR 50602, Oct. 30, 1978]

§ 29.1523 Minimum flight crew.

The minimum flight crew must be established so that it is sufficient for safe operation, considering—

- (a) The workload on individual crewmembers;
- (b) The accessibility and ease of operation of necessary controls by the appropriate crewmember; and
- (c) The kinds of operation authorized under § 29.1525.

§ 29.1525 Kinds of operations.

The kinds of operations (such as VFR, IFR, day, night, or icing) for which the rotorcraft is approved are established by demonstrated compliance with the applicable certification requirements and by the installed equipment.

[Amdt. 29-24, 49 FR 44440, Nov. 6, 1984]

§ 29.1527 Maximum operating altitude.

The maximum altitude up to which operation is allowed, as limited by flight, structural, powerplant, functional, or equipment characteristics, must be established.

(Secs. 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a),

14 CFR Ch. I (1-1-01 Edition)

1421, 1423, 1424, and 1425); and sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Amdt. 29-15, 43 FR 2327, Jan. 16, 1978]

§ 29.1529 Instructions for Continued Airworthiness.

The applicant must prepare Instructions for Continued Airworthiness in accordance with appendix A to this part that are acceptable to the Administrator. The instructions may be incomplete at type certification if a program exists to ensure their completion prior to delivery of the first rotorcraft or issuance of a standard certificate of airworthiness, whichever occurs later.

[Amdt. 29-20, 45 FR 60178, Sept. 11, 1980]

MARKINGS AND PLACARDS

§ 29.1541 General.

(a) The rotorcraft must contain—

- (1) The markings and placards specified in §§ 29.1545 through 29.1565; and
- (2) Any additional information, instrument markings, and placards required for the safe operation of the rotorcraft if it has unusual design, operating or handling characteristics.

(b) Each marking and placard prescribed in paragraph (a) of this section—

- (1) Must be displayed in a conspicuous place; and
- (2) May not be easily erased, disfigured, or obscured.

§ 29.1543 Instrument markings: general.

For each instrument—

(a) When markings are on the cover glass of the instrument there must be means to maintain the correct alignment of the glass cover with the face of the dial; and

(b) Each arc and line must be wide enough, and located to be clearly visible to the pilot.

§ 29.1545 Airspeed indicator.

(a) Each airspeed indicator must be marked as specified in paragraph (b) of this section, with the marks located at the corresponding indicated airspeeds.

(b) The following markings must be made:

(1) A red radial line—

- (i) For rotorcraft other than helicopters, at V_{NE} ; and

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(ii) For helicopters, at a V_{NE} (power-on).

(2) A red, cross-hatched radial line at V_{NE} (power-off) for helicopters, if V_{NE} (power-off) is less than V_{NE} (power-on).

(3) For the caution range, a yellow arc.

(4) For the safe operating range, a green arc.

(Secs. 313(a), 601, 603, 604, and 605 of the Federal Aviation Act of 1958 (49 U.S.C. 1354(a), 1421, 1423, 1424, and 1425); and sec. 6(c), Dept. of Transportation Act (49 U.S.C. 1655(c)))

[Doc. No. 5084, 29 FR 16150, Dec. 3, 1964, as amended by Amdt. 29-15, 43 FR 2327, Jan. 16, 1978; 43 FR 3900, Jan. 30, 1978; Amdt. 29-17, 43 FR 50602, Oct. 30, 1978]

§ 29.1547 Magnetic direction indicator.

(a) A placard meeting the requirements of this section must be installed on or near the magnetic direction indicator.

(b) The placard must show the calibration of the instrument in level flight with the engines operating.

(c) The placard must state whether the calibration was made with radio receivers on or off.

(d) Each calibration reading must be in terms of magnetic heading in not more than 45 degree increments.

§ 29.1549 Powerplant instruments.

For each required powerplant instrument, as appropriate to the type of instruments—

(a) Each maximum and, if applicable, minimum safe operating limit must be marked with a red radial or a red line;

(b) Each normal operating range must be marked with a green arc or green line, not extending beyond the maximum and minimum safe limits;

(c) Each takeoff and precautionary range must be marked with a yellow arc or yellow line;

(d) Each engine or propeller range that is restricted because of excessive vibration stresses must be marked with red arcs or red lines; and

(e) Each OEI limit or approved operating range must be marked to be clearly differentiated from the markings of paragraphs (a) through (d) of this section except that no marking is

normally required for the 30-second OEI limit.

[Amdt. 29-12, 41 FR 55474, Dec. 20, 1976, as amended by Amdt. 29-26, 53 FR 34220, Sept. 2, 1988; Amdt. 29-34, 59 FR 47769, Sept. 16, 1994]

§ 29.1551 Oil quantity indicator.

Each oil quantity indicator must be marked with enough increments to indicate readily and accurately the quantity of oil.

§ 29.1553 Fuel quantity indicator.

If the unusable fuel supply for any tank exceeds one gallon, or five percent of the tank capacity, whichever is greater, a red arc must be marked on its indicator extending from the calibrated zero reading to the lowest reading obtainable in level flight.

§ 29.1555 Control markings.

(a) Each cockpit control, other than primary flight controls or control whose function is obvious, must be plainly marked as to its function and method of operation.

(b) For powerplant fuel controls—

(1) Each fuel tank selector valve control must be marked to indicate the position corresponding to each tank and to each existing cross feed position;

(2) If safe operation requires the use of any tanks in a specific sequence, that sequence must be marked on, or adjacent to, the selector for those tanks; and

(3) Each valve control for any engine of a multiengine rotorcraft must be marked to indicate the position corresponding to each engine controlled.

(c) Usable fuel capacity must be marked as follows:

(1) For fuel systems having no selector controls, the usable fuel capacity of the system must be indicated at the fuel quantity indicator.

(2) For fuel systems having selector controls, the usable fuel capacity available at each selector control position must be indicated near the selector control.

(d) For accessory, auxiliary, and emergency controls—

(1) Each essential visual position indicator, such as those showing rotor pitch or landing gear position, must be marked so that each crewmember can